

MONTANA  
**Natural Heritage  
Program**

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**Just a test run  
All Montana Species  
in House District #**

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## Offline Field Guide

**Note:** This PDF version of the Montana Field Guide is intended to assist in offline identification and field work. It is not intended to replace the online Field Guide, as that version contains more information and is updated daily. For the most up-to-date information on Montana species, please visit [FieldGuide.mt.gov](http://FieldGuide.mt.gov)

The Montana Field Guide is a collaborative effort between the Montana Natural Heritage Program and Montana Fish, Wildlife and Parks.

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The Montana Natural Heritage Program is part of NatureServe – a network of over 80 similar programs in states, provinces and nations throughout the Western Hemisphere, bringing to Montana the "big picture" information on the true status of species and habitats.



MONTANA  
Natural Heritage  
Program



Montana Fish,  
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MONTANA



NatureServe



**Global Rank:** G5  
**State Rank:** S4

**Agency Status**

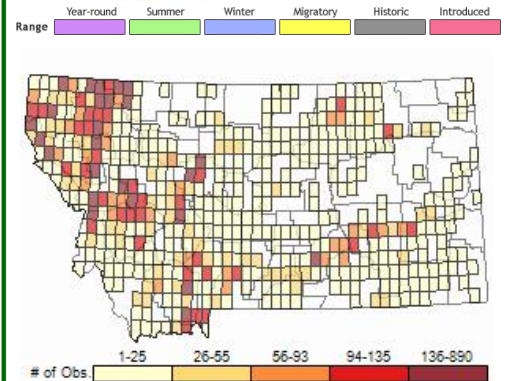
**USFWS:** DM; BGEPA;  
MBTA; BCC

**USFS:** SENSITIVE

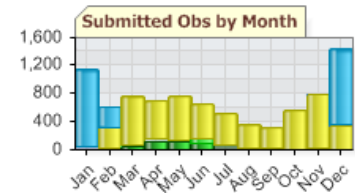
**BLM:** SENSITIVE

**FWP Conserv. Tier:** 1

**PIF:** 2



**# Observations:** 15976



## General Description

With a white head and tail contrasting with a dark brown body and wings, the adult plumage of the Bald Eagle, attained at approximately 5 years of age, is unmistakable. In addition to the obvious white head and tail, other distinguishing features include the yellow bill, cere, iris, legs and feet. Second in size of North American birds of prey only to the California Condor (*Gymnogyps californianus*), the Bald Eagle ranges in total length from 71 to 96 cm, with an average wingspan of 168 to 244 cm and a body mass ranging from 3.0 to 6.3 kg (Buehler 2000). In general appearance the sexes are similar with females approximately 25 percent larger than males. The plumage of the juvenile birds is much less distinct, being dark brown overall. The head, body, wings, and tail are dark brown with limited mottling on the underside of the wings and on the belly. While the legs and feet of the young bird are yellow like those of adults, the bill and cere are dark gray and the iris is dark brown.

The voice of the Bald Eagle is a weak series of chirps. The vocalization is described as flat chirping, stuttering whistles, given in a halting fashion, with the immature calls generally harsher and more shrill than those of the adults (Buehler 2000, Sibley 2000).

## Habitat

In Montana, as elsewhere, the Bald Eagle is primarily a species of riparian and lacustrine habitats (forested areas along rivers and lakes), especially during the breeding season. Important year-round habitat includes wetlands, major water bodies, spring spawning streams, ungulate winter ranges and open water areas (Bureau of Land Management 1986). Wintering habitat may include upland sites. Nesting sites are generally located within larger forested areas near large lakes and rivers where nests are usually built in the tallest, oldest, large diameter trees. Nesting site selection is dependent upon maximum local food availability and minimum disturbance from human activity (Montana Bald Eagle Working Group 1994). See the Montana Bald Eagle Management Plan (1994) for further details including home range sizes and habitat requirements of fledgling birds.



**Global Rank:** G5

**State Rank:** S3

**Agency Status**

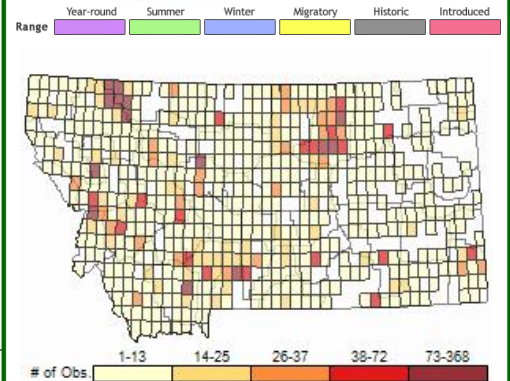
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BCC

**USFS:**

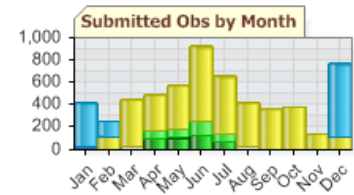
**BLM:** SENSITIVE

**FWP Conserv. Tier:** 2

**PIF:**



**# Observations:** 6657



## General Description

Adults are brown overall, gold on head and neck feathers, with light brown bands in the tail. Immature birds have white patches on the wings and white at the base of the tail feathers. Golden Eagles often soar with their wings held nearly flat, but slightly upturned. The legs are heavily feathered down to the tops of the toes. Golden Eagles range in length from 33 to 38 inches, and have a wingspan of 6-1/2 to 7-1/2 feet. A very large raptor with mostly brown plumage, a golden wash on the back of the head and neck, and a mostly horn-colored bill; tail is faintly banded; immatures have white at the base of the primaries and and white tail with a dark terminal band; total length 76 to 102 cm, wingspan 203 to 224 cm.

## Habitat

Golden Eagles nest on cliffs and in large trees (occasionally on power poles), and hunt over prairie and open woodlands; some nest sites in the Fallon area include scoroacious badland pillars (Cameron 1905), another near Knowlton was in a ponderosa pine (Cameron 1907). In the Livingston area 62% of 92 nests were on cliffs, 29% in Douglas-fir, and 2-3% each in ponderosa pine, cottonwood, snags, and on the ground (McGahan 1968). About 70% of cliff nests were oriented to the south or east, most nests were found between 4000-6000 ft elevation, and sites were associated with sagebrush/grassland hunting areas (McGahan 1968). In the Bozeman area, Golden Eagles move from mountains to valleys in the winter (Skaar 1969).



## Connecticut Warbler

*Oporornis agilis*

Accidental Species

[View in Field Guide](#)

Global Rank: **G4**

State Rank: **SNA**

**Agency Status**

USFWS:

USFS:

BLM:

FWP Conserv. Tier: **4**

PIF:

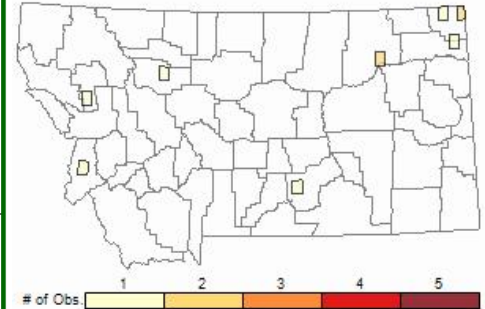
No photos are currently available

### General Description

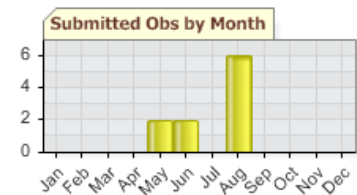
The Connecticut Warbler breeds from east-central British Columbia east to Quebec and the northern Great Lakes region (Sibley 2014). In Montana, this species has a few spring and late summer records (Montana Bird Distribution Committee 2012).

### Habitat

Information on this species is incomplete.



# Observations: 10







**Global Rank:** G4  
**State Rank:** S3B

**Agency Status**

**USFWS:**

**USFS:** SENSITIVE

**BLM:** SENSITIVE

**FWP Conserv. Tier:** 1

**PIF:** 1

## General Description

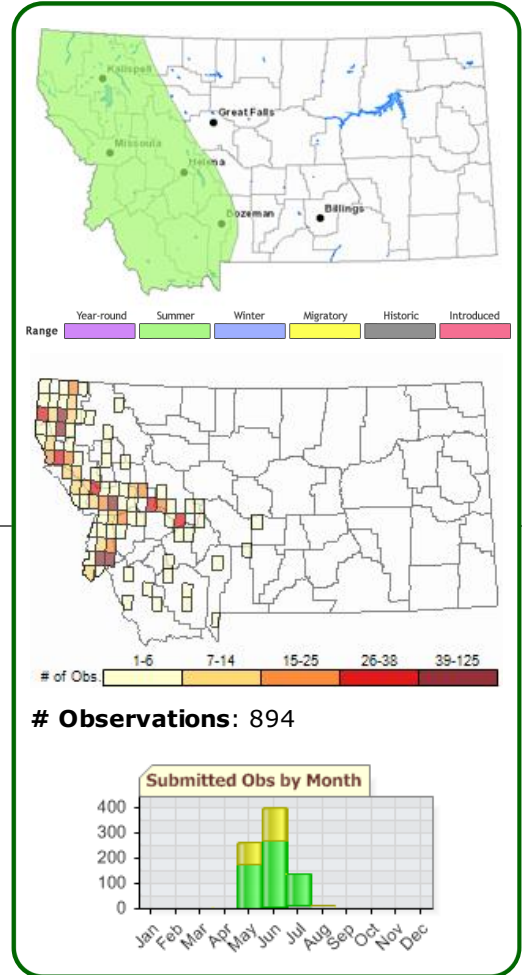
At 6.75 inches and only 60 grams, Flammulated Owls are one of the smallest owls in North America. Only Elf Owls (*Micrathene whitneyi*) are smaller. Other than females being somewhat larger than males, the sexes are extremely similar in appearance. The species has short ear tufts and an incomplete facial disk beginning at the ears and ending at the moustache. The eyes are dark. The wings are longer and more pointed in comparison to other species in the genus. The plumage of Flammulated Owls is gray with dark streaks and crossbars (McCallum 1994). Also, some rufous coloration is visible, especially near the face and on the shoulders. It is unsure whether a distinct red phase exists.

Flammulated Owls are usually heard more often than seen. The song of the male is described as a low-pitched, short, soft hoot like "poop" or "pooip" which is repeated every two to three seconds (Sibley 2000). Females are usually higher-pitched, longer in duration, and more quavering (McCallum 1994).

## Habitat

Information on breeding habitat in Montana is limited to one study in the Bitterroot Valley (Wright 2000). In Montana, Flammulated Owls are associated with mature and old-growth xeric ponderosa pine/Douglas-fir stands (Holt and Hillis 1987, Wright et al. 1997) and in landscapes with higher proportions of suitable forest and forest with low to moderate canopy closure (Wright et al. 1997). They are absent from warm and humid pine forests and mesic ponderosa pine/Douglas-fir (McCallum 1994a, Wright et al. 1997). Information gathered from other studies throughout their range suggest the breeding habitat of Flammulated Owls is montane forest; usually open conifer forests containing pine, with some brush or saplings (typical of the physiognomy of pre-European settlement ponderosa pine forests). The species shows a strong preference for ponderosa pine (*Pinus ponderosa*) and Jeffrey pine (*P. jeffreyi*) throughout its range (McCallum 1994b). They prefer mature growth with open canopy avoiding dense young stands. Flammulated Owls are found in a cooler, semi-arid climate, with a high abundance of nocturnal arthropod prey and some dense foliage for roosting (McCallum 1994a). Most often they are found on ridges and upper slopes (Bull et al. 1990, Groves et al. 1997).

In British Columbia, Flammulated Owls use dry interior Douglas-fir (*Pseudotsuga menziesii*) where ponderosa pine may be a codominant, but pure ponderosa pine is avoided. Also sometimes they are in pure aspen and, locally, in spruce (*Picea* sp.)/Douglas-fir and lodgepole pine (*Pinus contorta*)/Douglas-fir. They prefer forests dominated by trees more than 100 years old. The highest densities are found in 140 year-old to more than 200 year-old forests; owls were restricted to forests with multi-layered canopies with an abundance of large, well-spaced trees interspersed with grassy openings up to 2 hectares in size, and where cavity-bearing snags were "moderately common" (Howie and Ritcey 1987, van Woudenberg 1999). A study in the Kamloops area testing a habitat model in Douglas-fir/ponderosa pine found three



variables to be significant predictors for occupied habitat: elevation (between 850 and 1,150 meters), age class (older stands), and canopy closure (40 to 50 percent) (Christie and van Woudenberg 1997).

In Idaho, they are found mostly in mature stands of ponderosa pine, Douglas-fir, or mixtures of the two with relatively open canopies (Atkinson and Atkinson 1990), occasionally in stands of pure Douglas-fir or aspen where ponderosa pine is absent. Sixty-five percent of detections were on upper slopes or ridges. Tree densities were approximately 500 per hectare and the mean DBH (diameter at breast height) for all trees was 32 centimeters (Groves et al. 1997). One nest cavity, excavated by a Northern Flicker, was in a 6.5 meter tall, 34 cm dbh, Douglas-fir snag (Atkinson and Atkinson 1990). In northeast Oregon, nest trees were located in stands of old-growth ponderosa pine or mixed conifers near small clearings (Bull and Anderson 1978). In Colorado, they show strong preference for old-growth ponderosa pine and Douglas-fir, using older trees for foraging and singing (Reynolds and Linkhart 1992, Linkhart and Reynolds 1997).

Territories consistently occupied by breeding pairs were those containing the largest portion (more than 75 percent) of old-growth (200 to 400 years), whereas territories occupied by unpaired males and rarely by breeding pairs contained 27 to 68 percent old-growth (Linkhart and Reynolds 1997). Aspen (*Populus tremuloides*) is often a component of nesting habitat in Colorado and Nevada (Reynolds and Linkhart 1987b, McCallum 1994b). In northern Utah, the species has successfully nested in nest boxes in montane deciduous forests dominated by aspen with some scattered firs (Marti 1997).

Flammulated Owls prefer to forage in yellow pine and/or Douglas-fir, and these forest types apparently support a particular abundance of favored lepidopteron prey (McCallum 1994b). In Oregon, they forage in ponderosa pine and Douglas-fir types with low to medium stem density, but show particular preference for forest/grassland ecotones (Goggans 1986, cited in McCallum 1994b). In Colorado, they preferred to forage in old-growth (more than 200 years), which was related both to an abundance of lepidopteron prey and to the open crowns and park-like spacing of trees which allowed greater room to maneuver for the owls (Reynolds et al. 1989). The species may focus foraging in a few "intensive foraging areas" within the home range, averaging 1 hectare per range (Linkhart 1984, cited in McCallum 1994b).

Flammulated Owls roost in dense vegetation and thickets that provide shade and protection from predators. They often roost close to trunks in fir or pine trees, or in cavities (McCallum 1994b, USDA Forest Service 1994). In Oregon, they use mixed coniferous forest rather than pure ponderosa pine (Goggans 1986, cited in McCallum 1994a). In Colorado, large Douglas-firs or pines with a spreading form are used (Linkhart 1984, cited in McCallum 1994a). They roost close to nests (20 to 25 meters) during the nestling stage and just before fledging, and farther away before and after (McCallum 1994a). In British Columbia, Flammulated Owls roosted in regenerating thickets of Douglas-fir (Howie and Ritcey 1987). Migration habitat is in wooded and open areas in lowlands and mountains, including riparian areas and breeding habitat (McCallum 1994a).



## Lewis's Woodpecker

*Melanerpes lewis*

Species of Concern  
[View in Field Guide](#)



Global Rank: G4  
State Rank: S2B

### Agency Status

USFWS:

USFS:

BLM:

FWP Conserv. Tier: 2

PIF: 2

## General Description

The Lewis's Woodpecker is a medium sized woodpecker, approximately 10 to 11 inches in length. They weigh about 115 grams. Their wings and tail are relatively long (Sibley 2000). The head, back, wings and tail are greenish-black. They have a silver-pale collar and upper breast. The face is dark red and the belly and lower breast is pinkish or salmon-red. The sexes are similar in appearance, but males are usually larger than females (Tobalske 1997). Juvenile birds are distinct from adults, having an overall dark appearance with more brownish-black on the back. They usually lack the silver color of the neck, the pinkish belly color, as well as the red on the face (Tobalske 1997).

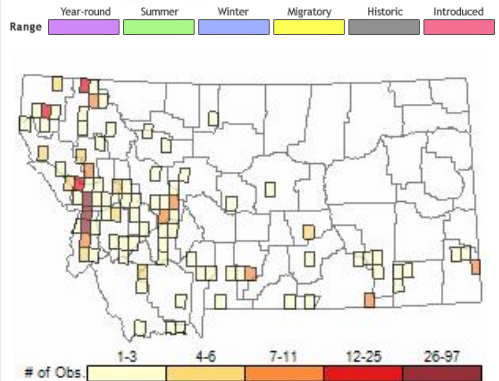
Lewis's Woodpeckers are quieter than other woodpeckers. They commonly call during the breeding season only. During breeding male Lewis's Woodpeckers will give a harsh "CHURR" call which is repeated 3 to 8 times. Males will also give a chatter call throughout the year and commonly during the breeding season (Tobalske 1997).

## Habitat

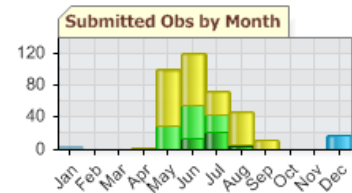
In the Bozeman area, Lewis's Woodpeckers are known to occur in river bottom woods and forest edge habitats (Skarr 1969). Habitat information from other Lewis's Woodpecker sources state that the breeding habitat is open forest and woodland, often logged or burned, including oak and coniferous forest; primarily ponderosa pine (*Pinus ponderosa*), riparian woodland and orchards, and less commonly in pinyon-juniper *Pinus* spp.-*Juniperus* spp.) (American Ornithologists' Union 1983). Lewis's Woodpecker distribution is closely associated with open ponderosa pine forest in western North America, and is strongly associated with fire-maintained old-growth ponderosa pine (Diem and Zeveloff 1980, Tobalske 1997, Saab and Dudley 1998).

Important habitat features include an open tree canopy, a brushy understory with ground cover, dead trees for nest cavities, dead or downed woody debris, perch sites, and abundant insects. Lewis's Woodpeckers use open ponderosa pine forests, open riparian woodlands dominated by cottonwood (*Populus* spp.), and logged or burned pine. They also use oak (*Quercus* spp.) woodlands, orchards, pinyon-juniper woodlands, other open coniferous forests, and agricultural lands. Apparently the species prefers open ponderosa pine at high elevations and open riparian forests at lower elevations (Bock 1970, Tobalske 1997). In the Blue Mountains of Oregon, they showed a preference for open stands near water (Thomas et al. 1979). Because the species catches insects from the air, perches near openings or in open canopy are important for foraging habitat (Bock 1970, Tobalske 1997).

Lewis's Woodpeckers often use burned pine forests, although suitability of post-fire habitats varies with the age, size, and intensity of the burn, density of remaining snags, and the geographic region. Birds may



# Observations: 504



move to unburned stands once the young fledge (Block and Brennan 1987, Tobalske 1997, Saab and Dudley 1998). They have been generally considered a species of older burns rather than new ones, moving in several years post-fire once dead trees begin to fall and brush develops, five to thirty years after fire (Bock 1970, Block and Brennan 1987, Caton 1996, Linder and Anderson 1998). However, on a two- to four-year-old burn in Idaho they were the most common cavity-nester, and occurred in the highest nesting densities ever recorded for the species (Saab and Dudley 1998). As habitat suitability declines, however, numbers decline. For example, in Wyoming, the species was more common in a seven-year-old burn than in a twenty-year-old burn (Linder and Anderson 1998). Overall, suitable conditions include an open canopy, availability of nest cavities and perches, abundant arthropod prey, and a shrubby understory (Linder and Anderson 1998, Saab and Dudley 1998).

Unlike other woodpeckers, Lewis's Woodpeckers are not morphologically well adapted to excavate cavities in hard wood. They tend to nest in a natural cavity, abandoned Northern Flicker (*Colaptes auratus*) hole, or previously used cavity, 1 to 52 meters above ground. Sometimes they will excavate a new cavity in a soft snag (standing dead tree), dead branch of a living tree, or rotting utility pole (Harrison 1979, Tobalske 1997). The mated pair may return to the same nest site in successive years. On partially logged burns with high nesting densities in Idaho, nest sites were characterized by the presence of large, soft snags and an average of 62 snags per hectare that had more than 23-centimeter diameter at breast height (dbh) (Saab and Dudley 1998).

In late summer, wandering flocks move from valleys into mountains or from breeding habitat to orchards. In winter, they use oak woodlands and nut and fruit orchards. An important habitat feature in many wintering areas is the availability of storage sites for grains or mast, such as tree bark (e.g. bark of mature cottonwood trees) or power poles with desiccation cracks (Bock 1970, Tobalske 1997). In southwestern Arizona and southeastern California, Lewis's Woodpeckers may use scrub oak, pecan orchards, and cottonwoods, but more study is needed in this area (Bock 1970). In Mexico, they use open and semi-open woodlands, especially those with oaks (Howell and Webb 1995).





## Black-and-white Warbler

*Mniotilta varia*

## Potential Species of Concern

[View in Field Guide](#)



Global Rank: G5

State Rank: S4B

### Agency Status

USFWS:

USFS:

BLM:

FWP Conserv. Tier: 2

PIF:

## General Description

Distinctly striped in black-and white plumage with a slightly decurved bill for bark foraging, the Black-and-white Warbler moves vertically along tree trunks, exhibiting characteristics generally attributed to nuthatches. The adult body length ranges from 11 to 13 cm, with an average wingspan of 21 cm. Body mass ranges from 8.8 to 15.2 grams, and bill length from 10.0 to 13.7 mm. The female is the smaller of the two sexes. Males, exhibiting darker, more contrasted markings than females in both breeding and non-breeding plumages, are defined by conspicuous black and white coloration. In breeding plumage, the male crown has a broad white median stripe, black sides, and a broad white superciliary stripe that extends to the nape. The lores and ear coverts are black, while the submustachial stripe is white above a black throat with black and white streaked sides of the neck. A white eye-ring contrasts with black ear coverts. The upper and underparts are streaked with black and white, the underparts being the more distinct and boldly marked. The wings are black with two evident wing bars. The feathers of this warbler's truncate tail are dull black marked with white, revealing white tail spots. The female's breeding plumage is similar to the males, but with pale gray lores and ear coverts and less contrasting black and white markings overall. A narrow, black eye stripe, white throat, and a less defined streaking on the back also distinguish the female from the male. Additionally, the female's tail spots are less distinct and a faint buff wash on the flanks and sides of the throat is generally present (Kricher 1995). The eyes have a brown iris. The feet in the juveniles are a pinkish-buff, becoming darker to black with age.

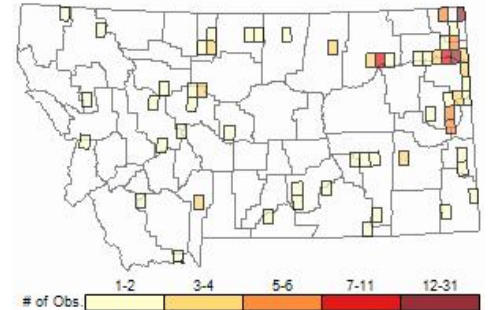
The vocalization of the Black-and-white Warbler is described as a thin, high-pitched two syllable squeaky "weeseee, weeseee, weeseee," or "squeaky, squeaky, squeaky," repeated upwards of ten times (Kricher 1995). One of the highest pitched of the wood warblers, the song of the Black-and-white Warbler is described as resembling the sound of a wet rag wiped repeatedly across glass (Bent 1953, Lemon et al. 1983, as cited in Kricher 1995). During breeding, a variation of the primary song is of a longer, faster, and more varied pitch (Bent 1953). Although varied, the call note of this species can be described as a sharp "chip," "pit," or sharp rattling "stick" (Terres 1980, Sibley 2000).

## Habitat

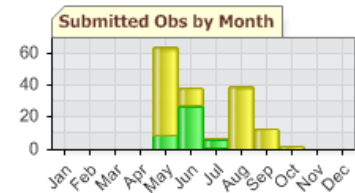
Information on habitat use in Montana is limited. Existing records indicate observations in riparian habitat and woody draws, those of mixed deciduous and ponderosa pine (*Pinus ponderosa*), in the eastern part of the state (Skaar unpublished data). One observation record indicates a female feeding on Douglas-fir (*Pseudotsuga menziesii*) northeast of Helena, while numerous records exist for the deciduous habitat in the town park in Westby, as well as that of several backyards, specifically in the northeast portion of the state (Montana Bird Distribution Committee 2012).



Range: Year-round Summer Winter Migratory Historic Introduced



# Observations: 169



In general, the Black-and-white Warbler inhabits young, medium-aged and mature deciduous and mixed forests during the breeding season (Bushman and Therres 1988, Kricher 1995). Studies of habitat selection have yielded conflicting results that appear to be due to geography, as well as variations in forest type and stand age. In the southern part of its range, this species appears to be most closely associated with relatively closed-canopied forests with low shrub density (Conner et al. 1983, Crawford et al. 1981, Noon et al. 1980, Wilson et al. 1995). In aspen forests in Alberta, however, stands with high shrub density were avoided (Westworth and Telfer 1993). Black-and-white Warblers were associated with high tree density and high canopy volume (indicative of mid- to late-successional forests) in mixed forests of central Ontario (Clark et al. 1983). The Black-and-white Warbler typically nests on the ground, often adjacent to a tree, shrub, rock, stump or log, under a shrub or dead branches, or, more rarely, atop stumps (Bent 1953, Kricher 1995).

A wide variety of habitats are used during the non-breeding season, from early successional disturbed areas to mature forests (Kricher 1995). Caribbean habitats utilized include coastal forest, dry interior forest, wet forest, forest edge, pine woods, riparian areas, wetlands, urban habitats that provide plant cover, and some open areas (Arendt 1992). Cacao, citrus, mango, shade coffee, and pine plantations in Puerto Rico, Jamaica, and Costa Rica are also selected (Robbins et al. 1992). Even though it showed a preference for undisturbed habitats, particularly forest, this species is considered a habitat generalist in western Mexico (Hutto 1992). Primary forest is preferred to other habitat types in the Yucatan Peninsula, Mexico (Greenberg 1992, Lynch 1989) and in Veracruz, Mexico (Rappole et al. 1992). In the Virgin Islands, they exhibited a preference for moist forest (90.5% of detections) over other habitat types (Askins et al. 1992).



**Global Rank:** G4

**State Rank:** S2

**Agency Status**

**USFWS:**

**USFS:** SENSITIVE

**BLM:** SENSITIVE

**FWP Conserv. Tier:** 1

## General Description

The Coeur d'Alene Salamander is a small, dark gray to black, lungless salamander with a yellowish throat patch, and a yellow, orange, green, or red dorsal stripe. The stripe usually has scalloped edges, though they may be even. The legs are relatively long with short, slightly webbed toes. The adult body length is about 5 to 6 centimeters (2 to 2.4 inches).

## Habitat

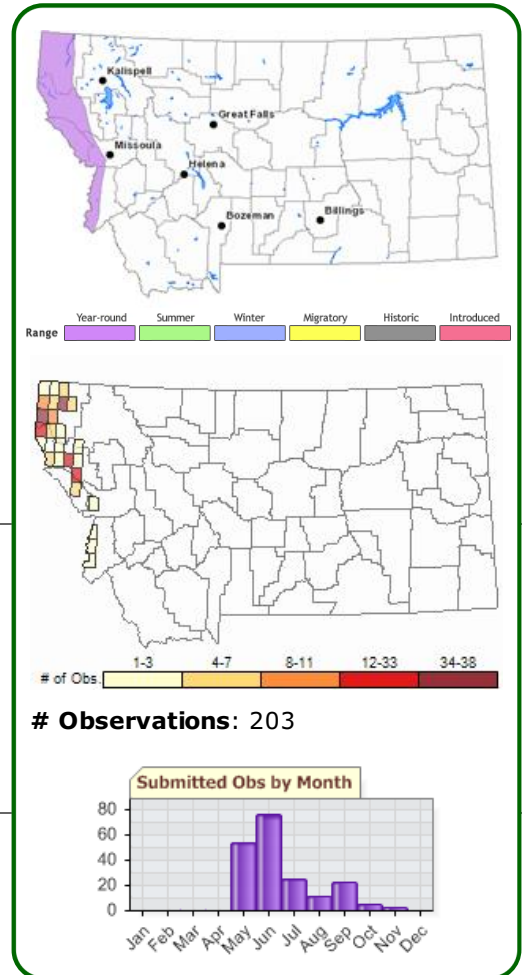
The occupied habitat for Coeur d'Alene Salamanders in Montana is like that for the entire global range, and includes the three major habitat categories: springs and seeps, waterfall spray zones, and stream edges (Wilson and Larsen 1988, Werner and Reichel 1994, Boundy 2001, Maxell 2002).

More specifically, primary habitats are seepages and streamside talus; they also inhabit talus far from free water (deep talus mixed with moist soil on well-shaded north-facing slopes). In wet weather, it occurs also in leaf litter and under bark and logs in coniferous forests. The species is a terrestrial breeder, with eggs presumably laid in underground rock crevices, although no nest sites have been found in the wild.

All plethodontid salamanders respire through their skin; terrestrial species lose water to the environment through evaporation and are therefore restricted to cool, damp environments. Because Coeur d'Alene Salamanders may live in the harshest climate of any northwestern plethodontid (Nussbaum et al. 1983), they are highly dependent on the thermal and hydrologic stability provided by wet habitats in otherwise inhospitable surroundings. For this reason, Coeur d'Alene Salamanders are closely tied to water and are considered among the most aquatic plethodontids (Brodie and Storm 1970).

Coeur d'Alene Salamanders have been found in three major types of habitat: springs or seeps, waterfall spray zones, and edges of streams. Seventy-six percent of known locations are classified as seeps, 6% as waterfalls, and 17% as streams. Two sites occur in abandoned mines. However, the relative number of locations in each type is biased by differences in survey efficiency and probably does not reflect the importance of the different habitats. The abundance of seep locations is at least partly due to the relative ease of surveying roadside seeps. Streams and waterfalls are often less accessible, particularly at night. Coeur d'Alene Salamanders are most difficult to find in streamside habitat, where they are usually observed underneath moist rocks on the banks adjacent to the water. Searches of 30 minutes to find a Coeur d'Alene Salamander at a stream site during daylight are not uncommon (Groves 1988).

Coeur d'Alene Salamander occurrences are generally located in coniferous forests, but are not restricted to a particular overstory species or aspect. Populations have been found in areas with ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), western larch (*Larix occidentalis*), western red cedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*) overstories (Groves 1988, Groves et al. 1996) at all aspects.



Ninety percent of 99 Idaho occurrences where habitat data have been collected were in areas of greater than 25% canopy cover and only two (both seeps) were in an area with 10% cover or less. Forest cover may be more important near stream sites than seep sites. Average cover at seven streamside sites (83% + or - 15%) was significantly greater than at seep locations (57% + or - 5%), (Cassirer et al. 1994). Minimum canopy cover measured at stream sites was 42%. Terrain at sites was typically steep, with average slopes of 62% (range 10-90%) (Groves 1988, Wilson 1991).

Known populations occur in association with sharply fractured rock formations (used for underground refugia) from 488 meters to 1,524 meters in elevation. This fractured rock is often found in the Belt Rock formation but can also occur in talus and in other geologic types (Wilson and Simon 1987, Groves and Cassirer 1989). The species is found in conjunction with both persistent and intermittent surface water. Thus, it is possible to locate Coeur d'Alene Salamanders at a wet site in the spring, yet be unable to find any animals at the same site later in the summer when the site is dry on the surface.





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**Global Rank:** G1

**State Rank:** S1

**Agency Status**

**USFWS:**

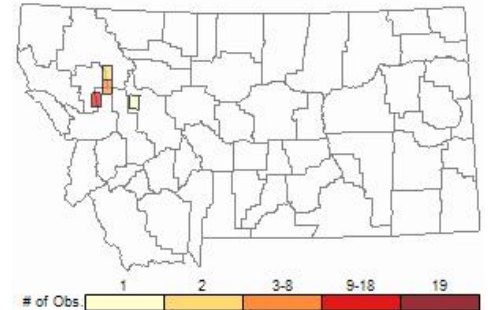
**USFS:**

**BLM:**

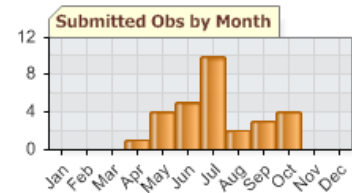
**FWP Conserv. Tier:**



Range Year-round Summer Winter Migratory Historic Introduced



**# Observations:** 29



## General Description

Pilsbry (1900, 1939) describes the shell as "strongly depressed, biconvex, acutely carinate, with open umbilicus contained about 4 times in the diameter; pale vinaceous fawn color to nearly white (under a fugacious light brownish cuticle which is lost in all adult shells seen). Spire low conoidal, often much depressed. Embryonic shell of 2 1/3 to 2 2/3 whorls, the first smooth, the rest varying from unevenly striate to finely costellate. Later whorls are coarsely sculptured with rude, unequal, retractive ribs, usually narrower than their intervals, which are densely and finely striate spirally. . .

. The last whorl descends shortly in front. Aperture angular at termination of the keel." Shell diameter 21-28 mm (Pilsbry 1939), 17.4-26.0 mm (Fairbanks 1984), 4.1-22.6 mm (Hendricks 1998); shell height 8.8-13.3 mm (Pilsbry 1939), 8.4-13.1 mm (Fairbanks 1984); whorls 5-5 1/2 (Pilsbry 1939), 5-5 3/4 (Fairbanks 1984). Shell diameter of new-born young 3.6-3.7 mm; whorls 2.3-2.5 (Hendricks 2003). The internal anatomy is described in Pilsbry (1939) and Fairbanks (1984). A population of this species (or a closely related undescribed form) found in alpine terrain on the Scapegoat Plateau in 2007 (P. Hendricks personal observation) was significantly smaller in average diameter (10.5 mm, range 3.2-14.7 mm), with no individuals > 15 mm diameter and 4.5 whorls out of over 500 encountered.

**Taxonomic Comment:** Originally named *Pyramidula elrodi* by Pilsbry (1900). Affinities of this species are with the *Oreohelix strigosa* group (Pilsbry 1933, Frest and Johannes 1995), based on the internal anatomy (see Pilsbry 1939); additional description of the internal anatomy is available in Fairbanks (1984). Pilsbry (1939) placed all *Oreohelix* in the Xanthonycidae.

## Habitat

This species occupies course talus, typically on south-facing slopes, and usually with sparse canopy of ponderosa pine (*Pinus ponderosa*), mountain ash (*Sorbus*) and serviceberry (*Amelanchier*) (Frest and Johannes 1995). Hendricks (1998) described vegetation at three talus sites in the Mission Range, each with 0% canopy cover in the search areas, as bordered by Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine with pockets of water birch (*Betula occidentalis*), quaking aspen (*Populus tremuloides*) and mock orange (*Philadelphus lewisii*). At the three Swan Range locations, portions of the occupied terrain (Hendricks unpublished data) are in talus under a forest canopy variably composed (depending on microsite) of Douglas-fir, ponderosa pine, quaking aspen, western red cedar (*Thuja plicata*), paper birch (*B. papyrifera*) and western larch (*Larix occidentalis*); canopy cover is 0-10%. On the Scapegoat Plateau, there is no overhead canopy, although the species is present under rocks in relatively stable low-angle talus sites.



Elrod (1902) considered *O. elrodi* to be "a shell of the rocks" (p. 117), present on the surface of exposed talus during favorable conditions, and present down among the stones when conditions become dry (Elrod 1903). During favorable surface conditions (wet, 10-17°C) live individuals are found attached to rocks near the surface but more often are present on organic litter accumulations within the talus; some aestivating mature individuals (18-21 mm diameter) are found near the talus surface during dry and warm (21-23°C) conditions (Hendricks 1998).

Occupied talus at the Mission Range site is described by Berry (1955) and Frest and Johannes (1995) as limestone. However, Hendricks (1998) found *O. elrodi* in this mountain range at sites comprised mostly of diorite and/or argillite; rock type at the two occupied sites in the Swan Range is also argillite (Hendricks unpublished data). On the Scapegoat Plateau the occupied talus is limestone (P. Hendricks personal observation), unlike at the other documented sites. Clast (fragment) size of the rocks comprising occupied talus ranges from 10 x 20 x 10 cm to 1 m<sup>3</sup> at the Mission Range sites (Hendricks 1998), and 10 x 10 x 10 cm to 0.5 x 0.5 x 0.5 m at the Swan Range sites (Hendricks unpublished data). Measured slope at occupied sites in both mountain ranges was 25-36° (Hendricks 1998, unpublished data). How deep into talus slopes this species occurs is unknown, but live individuals were found up to a meter below the surface at the Mission Range microsite co-occupied by *Discus brunsoni* (see Hendricks 1998).